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Rhode Island Department of Health
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Vol. 3, No. 5 May 2001 Edited by Jay S. Buechner, PhD

Trends in Inpatient Cholecystectomies, 1991-2000

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Cholecystectomy is one of the most frequently performed inpatient procedures in the United States. However, over the past decade, the number and rate of these procedures performed in the inpatient setting has declined. During the period from 1982 - 1992, the number of procedures performed ranged between an estimated 475,000 in 1985 (200 per 100,000 population) and 571,000 in 1991 (228 per 100,000); by 1998 the number had fallen to 439,000 (161 per 100,000) or by 23% from the peak in 1991 (down 29% in rate per 100,000 population).[1]

Much of the apparent decline can be attributed to the increasing utilization of laparoscopic cholecystectomy in ambulatory surgery settings that do not require an overnight hospital inpatient stay. In 1996, the most recent year national data are available, an estimated 321,000 laparoscopic cholecystectomies were performed in hospital and free-standing ambulatory surgical facilities,[2] accounting for 42% of the 769,000 cholecystectomies performed that year. This analysis presents trends and patterns in inpatient cholecystectomies in Rhode Island during 1991-2000.

Methods. Under licensure regulations, all acute-care hospitals in the state report to the Department of Health a defined set of data items on each inpatient discharge. Diagnoses and procedures are coded in the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM).[3] Hospitalizations with cholecystectomies were those with ICD-9-CM procedure codes in the range 51.23-51.24 (laparoscopic cholecystectomies) or 51.21-51.22 (other cholecystectomies). Uncomplicated cases were defined as those where cholecystectomy was the first-listed procedure and where the principal diagnosis was non-acute, uncomplicated cholecystitis and/or cholelithiasis (ICD-9-CM codes 574.10, 574.20, 574.60, 574.70, 574.80, 574.90, or 575.1). The analysis included discharges from October 1, 1990, through September 1, 2000, corresponding to hospital fiscal years 1991 - 2000. (The version of ICD-9-CM in use during fiscal 1991 did not differentiate between laparoscopic and other cholecystectomies. Data for fiscal years 1999 and 2000 are provisional.) Age-specific and overall rates were computed using state population estimates and projections from the federal Bureau of the Census.[4]

Results. During the first five years included in the analysis, the rate of cholecystectomies in Rhode Island was considerably higher than the national rate and showed no discernible downward trend, while the national rate fell by over 20%. (Figure 1) Subsequently, the state rate fell precipitously in fiscal 1996 and by 1997 was below the U.S. rate. Between 1997 and 2000, the state's rate stabilized near 150 procedures per 100,000 population.

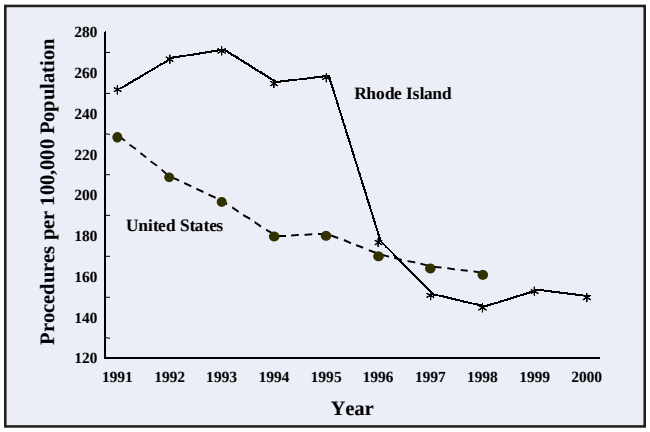

Figure 1. *Hospital Discharges with Cholecystectomies per 100,000 Population, Rhode Island and the United States, 1991 - 2000.*

In 1998, the last year for which national data are available, Rhode Island's rate was 10% below the national rate. Rhode Island's rate was lower in each of three patient age groups during which virtually all cholecystectomies are performed. (Figure 2) The largest observed relative difference was in the age group 15-44 years, where Rhode Island's rate was 28% lower than the national rate.

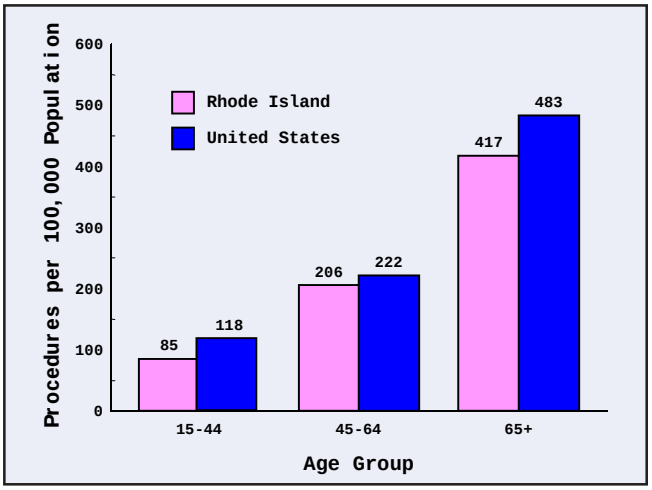

Figure 2. *Hospital Discharges with Cholecystectomies per 100,000 Population, by Age Group, Rhode Island and the United States, 1998.*

Of the 2,671 discharges with cholecystectomies in Rhode Island in 1992, 1,768 (66%) were uncomplicated cases. In 2000, 598 of 1,501 discharges (40%) were uncomplicated cases. Over the nine-year period examined, decreases occurred in both laparoscopic and other cholecystectomies among uncomplicated cases. Between 1992 (the first year in which laparoscopic and other procedures were separately identifiable) and 2000, the number of uncomplicated cases with laparoscopic procedures fell by 65%, and the number of uncomplicated cases with other cholecystectomies fell by 71%. (Figure 3)

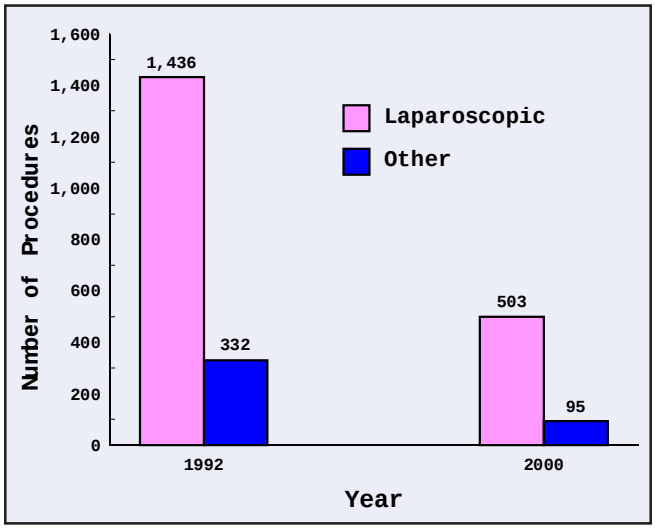

Figure 3. *Hospital Discharges with Cholecystectomies for Non-acute, Uncomplicated Cholecystitis and/or Cholelithiasis, by Type of Cholecystectomy, Rhode Island, 1992 and 2000.*

Conclusions. The examination of hospital inpatient data for Rhode Island reveals a major change in medical practice concerning how and where cholecystectomies are performed. Fewer such procedures are performed in inpatient settings now; this is particularly true for uncomplicated cases. By implication and extension from national data on ambulatory surgery facilities, a substantial proportion of cholecystectomies in Rhode Island are now performed by laparoscopic methods outside the inpatient setting. The trend observed for this particular surgical procedure reflects an overall pattern away from inpatient surgical care, made possible by new surgical techniques and improvements in anesthesia and driven by pressures toward greater efficiency in the provision of medical care.

There are no data available from Rhode Island's ambulatory surgery facilities corresponding to the data on hospital inpatient care with which to investigate the presumed complementary trend in cholecystectomies performed in those facilities. As a growing proportion of surgical care in general is being provided in ambulatory settings, this lack of data hampers surveillance for public health concerns and limits the availability of information on quality of care and outcomes in these settings. For these reasons, a number of states, including some New England states, have begun collecting statewide data from ambulatory surgical facilities. Rhode Island should monitor the usefulness of these reporting systems as they begin to produce information on their state's health care systems.

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Originally published in the May 2001 issue of Medicine & Health / Rhode Island

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